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10/580,900	12/05/2006	Kris Vandermeulen	31118/DY0304	1250

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EXAMINER	
BANH, DAVID H	

ART UNIT	PAPER NUMBER
2854	

NOTIFICATION DATE	DELIVERY MODE
11/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/580,900	VANDERMEULEN, KRIS	
	Examiner	Art Unit	
	DAVID BANH	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14 and 21-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14 and 21-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/26/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other: Machine Translation of JP 09-193501.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 14 and 21-37 have been considered but are moot in view of the new ground(s) of rejection. The newly applied Kiyoshi et al. reference teaches the additional motor and the provision of the print head at a fixed distance from the first frame.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "48" has been used to designate both the ribbon spool in Fig. 1 and the shaft in Figs. 3, 4, 6 and 8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 14, 21, 25, 26, 28, 30 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi et al. (JP 09-193501) in view of Cassiano (US PG Pub 2002/0110395).

For claim 14: Kiyoshi et al. teaches a printhead assembly comprising a printhead **1** arranged to print on an image receiving substrate (see Fig. 1), a platen **2**, a support **11**, a first frame **8** slideably connected to the support (see paragraph 48 of the Machine Translation, the pins **14, 15** allow the frame **8** to slide on the support **11**) with the printhead **1** being mounted on the first frame **8**, a second frame supporting the platen **2** (see at least paragraph 42, the platen **2** must be supported to maintain its position and is connected to and rotated by a drive device), a motor **20** configured to drive the first frame relative to the support to cause the print head to move in a linear direction toward the platen (see paragraph 42 and Fig. 1, the motor carries out vertical movement of the print head), whereby the distance travelled by the first frame relative to the support is controlled by the rotation of the motor **20** (see paragraph 42) and finally teaches that the distance between the first frame **8** and the print head **1** is fixed (see Fig. 1, the print head **1** and the first frame **8** are fixedly connected).

Kiyoshi et al. does not teach a compressor arranged to compressibly support the second frame such that it exerts a biasing force on the platen when one of the print head and the platen abuts said image receiving substrate such that when the motor drives the first frame relative to the support and towards the second frame such that a pressure applied to the image receiving substrate by one of the print head and platen can be controlled and finally that the distance between the first frame and the one of the print head and platen is fixed.

However, Cassiano teaches a compressor **53, 55** arranged to support a lower frame **45**, carrying a platen **43** (column 4, lines 60-67 and column 5, lines 1-3) so that the displacement is shared between the printing head **20** and the contrasting bar frame and platen **45, 43**. It would have been obvious to one of ordinary skill of the art at the time the invention was made to provide a compressor for biasing a platen disposed on the second frame for the purpose of allowing the lower frame to accommodate for pressure forces and to reduce any hard contact between the print head and the platen.

For claim 21: The combination of Kiyoshi et al. and Cassiano teaches the print head assembly of claim 14 wherein Kiyoshi et al. teaches that the print head **1** is mounted on the first frame **8** (see Fig. 1).

For claim 25: Kiyoshi et al. teaches a printhead assembly (see Fig. 1) comprising a thermal print head **1**, a platen **2**, a support **11** (see Fig. 1), frame **8** slideably connected to the support (see paragraph 48, the frame slides with pins **14, 15** against the support **11**), the print head **1** being mounted on the first frame **8**, a second frame (see Fig. 1, the mechanism supporting the platen **2**, the platen must necessarily be supported and rotated), the platen **2** being mounted on the second frame and a motor **20** configured to drive the first frame relative to the support to cause the print head **1** and platen **2** to move in a linear direction toward the other whereby the distance travelled by the first frame **8** relative to the support **11** is controlled by the rotation of the motor **20** (see Fig. 1 and paragraph 42, the rotation of the motor causes a gear to turn which carries out vertical movement of the thermal head **1**, which is motion relative to the platen **2**), wherein the distance between the first frame **8** and the print head **1** is fixed (see Fig. 1, they are connected and thus do not change in relative positioning), applied to the substrate can be

controlled (see column 1, lines 60-65, the position of the print head directly controls the pressure). Kiyoshi et al. teaches the use of the print head assembly in a method which controls the motor **20** to drive the first frame relative to the support **11** and relative towards the platen **2** and the second frame, such that the print head **1** abuts against the substrate **3** (see paragraph 42, the motor drives the cam **17** which moves the thermal head in a vertical direction). Kiyoshi et al. does not teach a compressor arranged to compressibly support the second frame such that it exerts a biasing force on the platen when one of the print head and the platen abuts said image receiving substrate and the driver drives the first frame relative to the support and towards the second frame such that a pressure applied to the image receiving substrate by one of the print head and platen can be controlled.

However, Cassiano teaches a compressor **53, 55** arranged to support a lower frame **45**, carrying a platen **43** (column 4, lines 60-67 and column 5, lines 1-3) so that the displacement is shared between the printing head **20** and the contrasting bar and platen **43, 45**. It would have been obvious to one of ordinary skill of the art at the time the invention was made to provide a compressor for biasing platen disposed on the second frame for the purpose of allowing the lower frame to accommodate for pressure forces and to reduce any hard contact between the print head and the platen.

In the combination of Kiyoshi et al. and Cassiano, the change in the position of the print head relative to the platen would change the compression of the compressor spring and thus change the pressure and biasing force exerted by the compressor on the platen.

For claim 26: The combination of Kiyoshi et al. and Cassiano teaches the method of claim 25 wherein controlling comprising controlling the motor **20** to drive the first frame **8** to a

predetermined position (see paragraph 42 of Kiyoshi et al., the motor drives the frame to a position, which qualifies as a predetermined position).

For claims 28: The combination of Kiyoshi et al. and Cassiano teaches the print assembly of claim 14 and, in the combination, the motor is capable of driving the first frame relative to the support in accordance with information stored with said image-receiving substrate (the image receiving substrate is not positively recited as part of the assembly, however, if applicable instructions are written on the image recording substrate, the motor can be made to control the frame in accordance with those instructions).

For claim 30: The combination of Kiyoshi et al. and Cassiano teaches the print assembly of claim 14 and, in the combination, the motor is capable of driving the first frame relative to the support to a predetermined position (any position can be considered a predetermined position and the motor moves the frame into at least one position).

For claim 36: The combination of Kiyoshi et al. and Cassiano teaches all of the limitations of claim 36 except that the second frame is slidably connected to the support. However, providing the second frame as slidably connected to the support is accomplished with the duplication of the parts provided to make the first frame slideably on the support. Provision of the slideable first frame for the print head in Kiyoshi et al. is done for the purpose of adjusting the spacing between the platen **2** and print head **1**. Providing a slideable frame for the platen would accomplish the same goal of allowing the platen and print head gap to be adjusted. MPEP Section 2144.04 Section VI holds that both Reversal of Parts and Duplication of Parts would be obvious expedients to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the sliding frame of

Kiyoshi et al. and provide it as the second frame connected to the overall support of the print head assembly to support platen for the purpose of allowing adjustments to the print head and platen gap and the pressure between the two elements to be effected on either the print head or platen end.

For claim 37: The combination of Kiyoshi et al. and Cassiano teaches the print assembly of claim 14 and Cassiano teaches that the second frame **45** is mounted on a base **59**, wherein the compressor **55** is between the base and the second frame **45** (see Fig. 5)

For claim 38: The combination of Kiyoshi et al. and Cassiano teaches the print assembly of claim 14. The position of the information on either the substrate or a cassette holding the substrate does not structurally limit the print assembly of claims 14 and 38.

For claim 39: The combination of Kiyoshi et al. and Cassiano teaches the print assembly of claim 14. The storage of the information as an electric tag or chip or as a barcode does not structurally limit the print assembly of claims 14 and 39.

5. Claims 22 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi et al. (JP 09-193501) in view of Matsui et al. (JP 60-018377).

For claims 22 and 34: Kiyoshi et al. teaches a printing device comprising a print head **1** arranged to print on a substrate (see Fig. 1), a platen **2**, a support **11** (see Fig. 1), the first frame **8** slideably connected to the support (see Fig. 1 and paragraph 48, the frame **8** slides along the support **11** via pins **14, 15**), the print head **1** being mounted on the first frame **8** and a driver **20** configured to drive the first frame **8** relative to the support **11** to cause the print head **1** to move in a linear direction toward the platen **2** (paragraph 42). Kiyoshi et al. does not teach a detecting device for detecting information stored with the image receiving substrate, and a processor

configured to use a look up table to determine a distance to drive the first frame relative to the support based on the information. However, Matsui et al. teaches a detecting device **4** for detecting information stored with a substrate (see Translated Abstract, an input device **4** senses data relating to the substrate, a data input device is also an information detecting device since it activates and relays information when information is present) that is used with a print head gap controlling part **1, 6** (see Translated Abstract, the computer **1** releases data based on the paper thickness and adjustment needed by comparing at memory, the computer is a processor and processor accessed memory is a type of look-up table) to determine the adjustment of a printing head gap in conjunction with a memory (see Translated Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an information detecting device for detecting information store with the image receiving substrate and a processor to determine the adjustment of the print head gap for the purpose of automatically controlling the spacing and pressure between the print head and platen for a plurality of paper types and thicknesses.

Particularly for claim 34: The combination of Kiyoshi et al. and Matsui et al. teaches that the method comprises driving the first frame relative to the support to cause the print head to move in a linear direction with respect to the platen (see Kiyoshi et al., paragraph 42, the print head **1** is moved by the motor **20** and cam **17** in a vertical direction and thus towards the platen **2**) in accordance with the information stored on the image receiving substrate and uses a look up table to determine the distance to drive the frame (see Translated Abstract of Matsui).

For claim 31: The combination of Kiyoshi et al. and Matsui teaches the device of claim 22 wherein Matsui teaches that the information is stored as a bar code (see Translated Abstract, the "customer code" is the information inputted).

For claims 32 and 35: The combination of Kiyoshi et al. and Matsui teaches the device of claim 22 and the method of claim 34 wherein Matsui teaches that the information specifies the thickness of the substrate (see Translated Abstract, the information corresponds to paper thickness information).

For claim 33: The combination of Kiyoshi et al. and Matsui teaches the device of claim 22 wherein and Matsui teaches that microprocessor (see Translated Abstract, also the microprocessor is the same processor as before), configured to detect the information stored with the substrate and consult a look-up table (see Translated Abstract, memory as before, the detected information is the content of duty inputted), to determine the distance to drive the first frame relative to the support (see Translated Abstract, determining the printer head gap).

6. Claims 23, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi et al. (JP 09-193501) in view of Cassiano (US PG Pub 2002/0110395) and Shiga et al. (JP 57-163588)

For claim 23: Kiyoshi et al. teaches a printhead assembly (see Fig. 1) comprising a thermal print head **1**, a platen **2**, a support **11** (see Fig. 1), frame **8** slideably connected to the support (see paragraph 48, the frame slides with pins **14, 15** against the support **11**), the print head **1** being mounted on the first frame **8**, a second frame (see Fig. 1, the mechanism supporting the platen **2**, the platen must necessarily be supported and rotated), the platen **2** being mounted on the second frame and a motor **20** configured to drive the first frame relative to the support to

cause the print head **1** and platen **2** to move in a linear direction toward the other whereby the distance travelled by the first frame **8** relative to the support **11** is controlled by the rotation of the motor **20** (see Fig. 1 and paragraph 42, the rotation of the motor causes a gear to turn which carries out vertical movement of the thermal head **1**, which is motion relative to the platen **2**), wherein the distance between the first frame **8** and the print head **1** is fixed (see Fig. 1, they are connected and thus do not change in relative positioning). Kiyoshi et al. does not teach a compressor arranged to compressibly support the second frame such that it exerts a biasing force on the platen when one of the print head and the platen abuts said image receiving substrate and the driver drives the first frame relative to the support and towards the second frame such that a pressure applied to the image receiving substrate by one of the print head and platen can be controlled.

However, Cassiano teaches a compressor **53, 55** arranged to support a lower frame **45**, carrying a platen **43** (column 4, lines 60-67 and column 5, lines 1-3) so that the displacement is shared between the printing head **20** and the contrasting bar and platen **43, 45**. It would have been obvious to one of ordinary skill of the art at the time the invention was made to provide a compressor for biasing platen disposed on the second frame for the purpose of allowing the lower frame to accommodate for pressure forces and to reduce any hard contact between the print head and the platen.

The combination of Kiyoshi et al. and Cassiano does not teach an input device for inputting data. However, Shiga et al. teaches ensuring good printing quality by adjusting the space between platen and print head with inform from a detection means detecting the thickness of the paper (see Translated Abstract). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to provide the print head assembly of Kiyoshi et al. and Cassiano with a detecting device for detecting thickness information of paper, which would constitute an input device for inputting data for the purpose of ensuring good print quality by automatic adjustment of the gap between print head and platen.

For claim 24: The combination of Kiyoshi et al., Cassiano and Shiga et al. teaches the printer of claim 23 and Shiga et al. teaches adjusting the gap between the platen and print head based on the thickness of the paper which is supplied as input data (see Translated Abstract), therefore, the driver which moves the first frame drives the first frame to a position determined with input data.

For claim 29: The combination of Kiyoshi et al. and Cassiano teaches the assembly of claim 14 but does not teach driving the frame relative to said support in accordance with information inputted through an input device. However, Shiga et al. teaches ensuring good printing quality by adjusting the space between platen and print head with inform from a detection means detecting the thickness of the paper (see Translated Abstract, further the detected data is an input means for the printer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the print head assembly of Kiyoshi et al. and Cassiano with a detecting device for detecting thickness information of paper, which would constitute an input device for inputting data for the purpose of ensuring good print quality by automatic adjustment of the gap between print head and platen.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi et al. (JP 09-193501) and Cassiano (US PG Pub 2002/0110395) as applied to claim 25 above and in further view of Matsui et al. (JP 60-018377).

For claim 27: The combination of Kiyoshi et al. and Cassiano teaches the all of the limitations of claim 27 except that the controlling comprising controlling the motor to drive the first frame relative to the support in accordance with information stored in the image receiving substrate. However, Matsui et al. teaches a detecting device **4** for detecting information stored with a substrate (see Translated Abstract, an input device **4** senses data relating to the substrate, a data input device is also an information detecting device since it activates and relays information when information is present) that is used with a print head gap controlling part **1, 6** (see Translated Abstract, the computer **1** releases data based on the paper thickness and adjustment needed by comparing at memory, the computer is a processor and processor accessed memory is a type of look-up table) to determine the adjustment of a printing head gap in conjunction with a memory (see Translated Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an information detecting device for detecting information store with the image receiving substrate and a processor to determine the adjustment of the print head gap for the purpose of automatically controlling the spacing and pressure between the print head and platen for a plurality of paper types and thicknesses.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID BANH whose telephone number is (571)270-3851. The examiner can normally be reached on M-F 9:30AM - 8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHB
November 22, 2010

/Daniel J. Colilla/
Primary Examiner
Art Unit 2854